Offshore wind turbulence / wind-wave interaction

The Dynamics of Urban and Coastal Atmosphere team in the Laboratory of Hydrodynamics, Energetics and Atmospheric Environment (LHEEA) is working on marine atmospheric boundary layer (MABL) in offshore and coastal environment for both fundamental and applied topics. The research team is continuously operating field measurement campaigns (wind LiDAR, scanner and profiler, sonic anemometer…) from the shore or at sea and has several numerical models ranging from LES at micro-scale to analyze wind-wave interaction to WRF-LES to study meso-scale dynamics in the MABL. The variety of approaches allows to tackle the spatial and temporal complexities.

The project would involve research actions linked to the analysis of the MABL and wind/wave interaction in a broad range of applications depending on the candidate background including:

- analysis of the momentum transfer between the atmosphere and the sea surface by means of LiDAR measurements on site (L. Paskin, B. Conan, Y. Perignon and S. Aubrun https://doi.org/10.3390/rs14133007)

- modeling of wind-wave at microscale (L. Paskin, B. Conan, Y. Perignon and S. Aubrun https://doi.org/10.3390/atmos13122012)

- analysis of wind profiles over the sea interacting with the wave surface (B. Conan and A Visich https://doi.org/10.5194/wes-2023-141 and W. Bruch and B. Conan, https://ams.confex.com/ams/103ANNUAL/meetingapp.cgi/Paper/416635)

Prerequisites:

- A Ph.D. in Mechanical and Aerospace Engineering, Civil and Environmental Engineering, Atmospheric and Oceanic Sciences, Geosciences, Computational Mathematics,
- A first successful experience in one of the following topics: atmospheric turbulence alaysis, data processing, micro-scale wind-wave modeling, meso-scale wind wave modeling, LiDAR measurements would be a great added value,
- Good verbal and written communication skills.

Contacts

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Position details:

Starting date: S1 2024
Duration: 12 months

Gross salary: 2400-2650 €/month

Application

The application should be sent by email

- Covering letter
- Curriculum Vitae
- PhD certificate
- Recommendation letter(s) from previous supervisors or employers
- List of publications, if applicable